Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

532006

F.S.
D-1

May 4, 1925

MAY

FOREIGN NEWS ON DAIRYING

THE DAIRY INDUSTRY OF NEW ZEALAND

A Study of Foreign Competition in Dairying

By

Theodore Macklin,

University of Wisconsin.

The United States Department of Agriculture
Cooperating with the Agricultural Experiment
Station of the University of Wisconsin

Prepared for Publication in the Division of Statistical and
Historical Research by P. F. Brookens.

Note: Dr. Theodore Macklin of the University of Wisconsin went to New Zealand to make this study as a joint employee of the University of Wisconsin and the U. S. Department of Agriculture. A preliminary report of his study is presented herewith. A preliminary report is also being published by the Agricultural Experiment Station of the University of Wisconsin. A more complete economic study will appear in a subsequent bulletin to be published by the Agricultural Experiment Station of the University of Wisconsin. The data contained in the bulletin are results of both personal observation and information collected from official and unofficial sources.

65327
wyn-77

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

New Zealand as a Source of Competition in Dairying.

New Zealand's forty-five year old dairy industry is one of the most progressive in the world, and that it is only in its infancy is proclaimed in that country on every hand. The present area of 6-1/4 million acres devoted to dairy production can be increased ultimately to at least 10 million acres and probably to 12 million. The grass-producing capacity of each acre can be improved through use of fertilizer, and the butterfat yield per cow can be easily increased 50 per cent or more. These lines of increased output are all under energetic development at present and give promise of doubling New Zealand's dairy output in the next ten years. Persistent improvement in the quality of product is equally evident. Competition from this source, already important, is therefore to be reckoned with increasingly in the world's markets.

Conditions under which production is carried on in New Zealand permit low cost of production. Nature has been exceedingly good to the dairyman in New Zealand. Due to the equable, mild climate, abundant rainfall, and combination of soil, topography and cheaply obtained fertilizer, a large output of butterfat per acre is realized without the strenuous effort required in continental regions of the corresponding latitude in the Northern Hemisphere. Twelve months of pasturage for cattle is the rule, and investment in barns is not required. Due largely to the conditions just described and to the wide-spread adoption of the milking machine, no dairy country has forged ahead so rapidly in quantity of milk produced per individual farm.

At present about one-half of the cows are milked by machinery. The milking machine has come to stay in New Zealand and is doing there for the dairyman what the binder has done for the wheat grower in the United States. The machine was introduced about the same time that it was in America, and the shortage of labor during the war led to its general adoption. A small milk shed is constructed to house the machinery as the cattle are not housed in barns. The milk shed is generally equipped with a four-cow plant. A man and a boy with this equipment can easily handle from 40 to 50 milking cows. Gasoline is commonly used for power, but with the rapid introduction of electricity for rural use, this type of power is becoming popular on account of the reduced cost and convenience. As to the effect of machine milking upon quality of product, much, of coursem depends on the care with which the machines are tended. As one factory manager put it, "good milking machine practice can deliver the best quality of milk; bad milking machine practice delivers the worst".

As compared with the intensive specialized butter producing sections of the United States, the farm cost of producing butterfat in New Zealand under these conditions is surprisingly low. Conservative estimates indicate that this cost in 1924 was not more than two-thirds as great as in Wisconsin.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

Another outstanding cause of New Zealand's dairy superiority is undoubtedly the character of leadership both from the industry itself and from the Government Its leadership is able and well informed. Business judgment, both by this leadership and by the management employed in the dairy factory system, is prized and encouraged. Everywhere among the progressive dairy farmers' cooperative organizations, which cover the Dominion, it seems evident that New Zealand dairymen will attack vigorously every problem. The primary aims of cooperative leaders in the dairy industry are to lower cost of production through enlarged output of both the farming and factory units to make the best butter in the world and so market it that producers will realize satisfactory profits from their business.

The development of the dairy industry in New Zealand is not likely to be hampered by other agricultural enterprises. Within the dairy sections the summers are too cool and too moist to favor grain growing on a commercial scale, which is discouraged further by the peculiar fitness of the country for highly specialized dairying. Dairy production, therefore, may be expected to continue to develop very rapidly to the limit of the capacity of the country to produce.

Output Doubled in Past Decade.

That the dairy industry of New Zealand is espanding at a remarkable rate is amply demonstrated by statistics. In 1916, 3,325,078 acres in 20,251 farms produced 157,760,176 pounds of factory made butter and cheese. In 1923, 6,267,597 acres in 38,818 farms produced 316,236,272 pounds of factory made butter and cheese. This is the more remarkable when it is understood that butter production increased at a more rapid rate than cheese, as the following table indicates.

TABLE I.- DAIRY FARMING AND FACTORY OUTPUT IN NEW ZEALAND
1915-16 to 1922-23.

Item	Year 1922-23	Year 1915-16	Increase 1922-23 over 1915-16
Number dairy farms..................	38,818	20,251	13,567
Acreage devoted to dairy farming...	6,267,597	3,325,079	2,942,518
Average size of dairy farm (acres).	162	164	
Butter made in factories (Pounds)..	176,461,728	67,588,640	108,873,088
Cheese made in factories (pounds)..	139,774,544	90,171,536	49,603,008
Total factory made butter and cheese (pounds)................	316,236,272	157,760,176	138,476,096
Total factory butter as butter-fat (pounds)..................	144,698,617	55,422,685	89,275,932
Total factory cheese as butter-fat (pounds)..................	55,909,813	36,068,614	19,841,199
Grand total butterfat equivalent (pounds)........................	200,608,430	91,491,299	109,117,131 (119.2%)

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

With the increased butterfat production of 119.2 per cent in seven years, it is by no means unlikely that the output will be doubled again in the coming ten years. This suggests severe competition in world markets with Denmark in butter and with Canada in cheese.

Winning a Place in World Markets.

New Zealand has rapidly won the place now held in world markets both by quantity and quality of production. New Zealand butter and cheese, once received in small quantity in London, now represent the largest combined import of dairy products from any country. Moreover, that country has outstripped Canada as a source of cheese supply and is rivalling Denmark as a source of butter supply. That this growth of exports has been a capturing of the London market with New Zealand prices fully maintained in comparison with those for Denmark and Canada indicates that quality competition has been one essential feature of New Zealand's success. In this accomplishment, credit is due to the mutual work of the Dairy Grading System by the Government and of the loyal support it has had, especially from the farmers' cooperative dairy factory organizations and their leaders. The fact must not be overlooked that the population of New Zealand is small (about one-half that of Wisconsin) and that consequently the trend of exportable surplus will bear rather a direct relationship to the trend of production.

Increasing Rivalry with Denmark.

That the New Zealand policy in dairying is aggressive and effective is suggested by her actual accomplishments in the markets of the United Kingdom against all competitors. In 1896 Great Britain received 27.7 per cent of her butter imports from Denmark and New Zealand. Of this the Danish delivery was 21 times as much as the New Zealand delivery. In 1924, the same two countries provided Great Britain with 61 per cent of her butter imports. In that year, Danish delivery was only 1-3/4 times larger than the New Zealand delivery. Thus in 28 years New Zealand, as a butter competitor of Denmark in supplying the British market, has grown from a size of less than one-twentieth to almost three-fifths of the size of Denmark. The size of the British butter import business and the part of it supplied by the two countries is shown in Table 2.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

TABLE 2.- BUTTER IMPORTED AND PROPORTIONS BY THE UNITED KINGDOM FROM NEW ZEALAND AND DENMARK.

Year ended: June 30	Total imports of butter, United Kingdom	Per cent from			
		New Zealand	Denmark	Denmark and New Zealand	All other countries
	Pounds				
Average 1882-1892	412,518,400	.6	20.9	21.5	78.5
1891	432,884,480	.7	22.7	23.4	76.6
1896	519,171,520	1.2	26.5	27.7	72.3
1901	373,028,160	5.1	43.1	48.2	51.8
1906	482,704,320	7.0	37.7	44.7	55.3
1911	499,049,600	7.1	39.7	46.8	53.2
1916	331,906,240	12.4	36.9	49.3	50.7
1921	314,077,120	20.0	33.9	53.9	46.1
1923	513,096,640	27.8	39.7	67.5	32.5
1924	524,180,160	22.1	38.9	61.0	39.0

New Zealand Overtakes Canada as Exporter of Cheese

In competition with Canadian cheese, New Zealand has gone still farther. Less than thirty years ago Canada delivered to the United Kingdom over 16 times as much cheese as New Zealand and in 1924 only two-thirds as much. Taken together, these two countries provided the United Kingdom with 78 percent of her cheese imports in 1896 and 86 per cent in 1924. The size of her cheese import business and the part of it supplied by Canada and New Zealand is shown as follows in Table 3.

TABLE 3. - CHEESE IMPORTS AND PROPORTIONS BY THE UNITED KINGDOM FROM NEW ZEALAND AND CANADA.

Year ended: June 30	Total imports of cheese, United Kingdom	Per cent from			
		New Zealand	Canada	Canada and New Zealand	All other countries
	Pounds				
1901	293,525,120	3.2	59.0	62.2	37.8
1906	291,338,880	4.5	73.7	78.2	21.8
1911	272,079,360	16.6	62.9	79.5	20.5
1916	285,031,040	25.6	55.3	80.9	19.1
1921	302,543,360	50.7	40.8	91.5	8.5
1923	310,918,720	52.7	33.0	85.7	14.3
1924	311,230,080	51.6	34.4	86.0	14.0

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

This shows the progress New Zealand has made in capturing a large part of the British market in the face of Danish and Canadian efficiency and established reputations. It demonstrates first of all the dairy resources of New Zealand. Secondly it demonstrates the market test of high quality and proves the immense value of the New Zealand policy, especially of her cooperative institutions and grading system which have taken the active lead.

Further Plans to Win World Markets.

New Zealand dairymen are not resting on their oars because of their success thus far in meeting Danish and Canadian competition. Ever since 1912 considerable interest has been manifested in the development of an unified large scale cooperative sales program. The depression in prices when the arrival of New Zealand butter and cheese flooded the London market has engaged their attention. The Danish cooperatives commenced federated sales activities as early as 1895. By 1912 they had solved such a large part of their own local problem of over- or under-fed markets that enterprising leaders in the New Zealand cooperative factory organizations commenced educational work through the National Dairy Association along this line for foreign markets. From that time, proposals for federating the cooperative factories for sales purposes have been widely discussed. The outcome in August, 1923, was the enactment into law of the New Zealand Dairy Produce Control Bill. Thus ended in a definite line of action, after twelve years of agitation for unified cooperative selling, a struggle which is headed up toward a constructive development with modern merchandising for a whole industry as its central objective.

The Dairy Produce Control Board.

The Dairy Produce Control Board has been created by the dairy farmers of New Zealand under special legislative grant. The board as set up, after an overwhelming majority of dairymen, in a referendum, had registered their approval of the idea, comprises nine representatives of dairy producers, two government representatives, and one appointee from the ranks of private middlemen within or close to the dairy industry. The board is vested with power to execute such sales and merchandising policies as it deems expedient and helpful. In fact, every phase of the movement of dairy produce destined for export falls within the jurisdiction of the board and its marketing authority. The first activity of the board has been to send a committee of three to the markets in which New Zealand produce is shipped, in order to ascertain all facts and conditions preparatory to exercising any judgment as to what action might wisely be taken. Starting out from the Dominion on April 15, 1924, the three Control Board members assigned to this research spent nearly nine months in vigorous work in Canada, the United States, Great Britain, Denmark, Switzerland and elsewhere. They returned to New Zealand during the fore part of January, 1925, and held the first executive meeting of the full Board to consider the findings on January 28, 1925. As to further activities of the Board along sales or merchandising lines, it is known now simply that provision has been made for absolute control of marketing to be assumed by the Control Board on August 1, 1926.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

Improvements Already Effected by Board.

At least three definite accomplishments by the Board, any one of which would justify its existence, have increased its popularity with the dairy producers. These are the contracts reducing ocean freight and insurance rates on butter and cheese and the research work which has made possible greatly increased understanding of overseas markets and marketing conditions. Through this information, dairymen are becoming for the first time really concerned over a problem not of making but of selling butter and cheese to advantage, a problem overlooked during the long period of continually rising prices. The information-gathering and disseminating features of the Board alone justify its creation and maintenance. Fortunately, however, this information work is but the beginning of a program which all the leaders hope will put into efficient practice the knowledge of marketing thus gained.

Sales Policies and Success of New Zealand Cooperative Dairy Company.

In the past six years, one of the largest known cooperative butter sales organizations involving 30 per cent of New Zealand dairy produce, has come into existence in New Zealand. By its active sales work during this time, a fund of practical business knowledge, has been established as well as experience which enables the Dairy Produce Control Board to commence its industry-wide sales and merchandising program without launching into untried or purely theoretical endeavors. In fact, the feasibility of utilizing the idea of the Control Board itself was indicated in large measure by the remarkable improvements effected within a few years by the operations of the New Zealand Cooperative Dairy Company, Ltd. The advantages, which the Control Board measure will seek to make applicable to the whole of the Dominion dairy produce, as well as to the 30 per cent of it to which the New Zealand Cooperative Dairy Company has extended it, relate to all phases of developing scientific and efficient marketing for the butter and cheese output destined for export.

Among the outstanding achievements of this large cooperative company is its important improvement in the quality of butter turned out since the amalgamation of the former three separate cooperative systems. Under the old regime, prior to 1918, sixty per cent of the butter in the several companies was superfine. As a result of the grading of raw material and separate manufacture of each grade of cream and payment to farmers for the quality delivered, one quarter of the total volume of butter has been lifted from the former lower grades or scoring points into the superfine class, thus causing 85 per cent of the output to be of the highest quality class or above 92 score. This, moreover, was done in a period when the concern doubled its output of butter.

Upon the merits of the 42,000,000 pounds of butter made, more than four-fifths of which is of high quality and exactly standardized to uniformity, a branded product has been placed on the British market. The success of the selling policy is shown by the fact that "Anchor" brand butter normally runs even in prices with Danish butter which has been admitted by all for years to top the market regularly.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

Still another feature of this cooperative sales policy is the work with the Tooley Street (London) wholesalers, by which those who make the most effective sales are encouraged in their endeavors by increased patronage, thus winning their further good will and heartier support. The experience in selecting the best of the British butter wholesalers and in gaining their enthusiasm and support is one of the great assets which the Control Board will gain from the New Zealand Cooperative Dairy Company.

Costs of Butterfat Production.

When interest on investment or value of land is taken as a cost, the largest single item in producing butterfat in New Zealand at any particular time may be the annual interest on the value of investment made in the land which any farmer is devoting to dairying. This fact at once makes land values an important consideration in arriving at the individual farmer's cost of butterfat production from his individual standpoint. In 1910 the average prices of dairy farms ranged from £20 to £40 or approximately $100 to $200 per acre. Exceptionally good farms sold up to £50 and even £65 or roughly $250 to $325. These, however, represented the upper limit of values. During the boom year of 1919-20, land values mounted on a wave of speculation raising them in cases to £125 and in exceptions to £200 an acre. The ordinary price during this period was from £45 to £85 an acre. In 1924, after most of the over valuation had been squeezed out by lower prices for butterfat and by readjusted mortgage valuations, where foreclosures or bankruptcies had not occurred, land values had settled to from £30 to £60 or (at prevailing exchange) $133 to $266 per acre. Only the exceptional farm was considered worth much more than £80 or $354 for actual farming where fourteen years earlier half that figure was near the upper limit.

Manifestly any misjudgment upon the part of dairy farmers in purchasing land at prices representing over-valuations of 50 to 100 per cent beyond their actual worth for dairying in the light of prices likely to be realized for butterfat will make costs excessive and profits small. In many cases, such speculative activities through misjudgment have actually deprived farmers of profits sought and have saddled them with losses of serious consequences. That the New Zealand dairy farmer, in an industry-wide manner has indulged in a speculative land boom comparable to the land speculation in the corn belt of the United States following the world war, is one of the facts which impresses observers. Since the land charge (interest on the land value or rental for the land) represents from £3 to £6 out of a total cost of production of less than £14 for 170 pounds of butterfat it is obvious that an overvaluation of 50 per cent in land values is a cause of a needless annual loss either by way of shrunken profits or by way of excessive losses. Reasonable land values, if paid for land in place of unreasonable or speculative values, would reduce the cost of production per pound of butterfat by the equivalent of four to eight cents.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

TABLE 4.- COSTS OF PRODUCING BUTTERFAT IN NEW ZEALAND PER ACRE AND PER COW IN 1916-17.

Charges, direct and indirect	Costs per Acre		Costs per Cow	
	New Zealand Money	U.S. Money at 1916-17 Exchange.	New Zealand Money	U. S. Money at 1916-17 Exchange
FEED:	£ - s - d	Dollars a/	£ - s - d	Dollars a/
Grass from two acres of land averaging £45 per acre, the annual charge being at the rate of 6 per cent of investment...	2-14-0	12.84	5-8-0	25.68
Extra winter feed for two horses and regrassing and artificial fertilizers...	0-13-9	3.27	1-7-6	6.54
Total Feed Cost......	3- 7-9	16.11	6-15-6	32.22
LABOR:				
One man to 20 cows. Salary £2-12s-6d ($14.98) per week, without board, for 52 weeks................	3- 8-3	16.22	6-16-6	32.44
Cream hauling (30 cow herd	0-4-7-1/2	1.10	0- 9-3	2.20
Repairs and depreciation (30 cow herd)...........	0- 8-10	2.10	0-17-8	4.20
Miscellaneous (upkeep of herd, loss from deaths, bull maintenance, cow covers, etc.)...........	0-19-7	4.66	1-19-2	9.32
Interest at 6 per cent on value of cows at £13 ($57.00) each...........	0- 7-9-1/2	1.85	0-15-7	3.70
Total Costs.........	9-1-10	43.23	18-3-8	86.46
Credits: Income from by-products................	2-3-9	10.40	4- 7-6	20.80
Net Costs...........	6-18-1	32.83	13-16-2	65.66

---

a/ Conversions from New Zealand currency at the average exchange rate at New York on London during 1916-17 or at the rate of 23.7777 cents per shilling.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

It is rather generally conceded that the land area required to furnish the grass and feed to support a cow yielding 170 pounds of butterfat is worth £90 ($438 at par of exchange) if or when butterfat prices are at one shilling and six pence, equivalent at par to approximately 36 cents a pound. It is upon this basis that the cost estimates for producing New Zealand butterfat shown in Table 4 above have been calculated.

The costs indicated in Table 4 amounting in 1916-17 to the equivalent of $65.66 per cow or $32.83 per acre as the average for New Zealand, are quoted indirectly from an official estimate made at that time. Land values since that year have been subjected to enormous increase and subsequent readjustment to approximatelytheir former levels. Changes in land values would, of course, result in correspondingly changed costs of production to the individual producer on the same basis of calculation.

Different yields per cow likewise affect the costs of production per pound of butterfat. The average New Zealand cow now produces 170 pounds of butterfat annually. Herds vary greatly, of course, in output per cow.

TABLE 5. - A CALCULATION OF COSTS PER COW
IN 1916-17 ACCORDING TO YIELDS
OF BUTTERFAT

Butterfat yield per cow	Cost per pound of butterfat		Cost per pound of butterfat in one pound of butter (Basis 20% overrun)	
Pounds	Pence	Cents	Pence	Cents
160	20.7	41.0	16.6	32.9
170 a/	19.5	38.6	15.6	30.9
180	18.4	36.5	14.7	29.1
200	16.6	32.9	13.3	26.4
220	15.6	30.9	12.5	24.8

a/ New Zealand average.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

American and New Zealand Butterfat Production Costs Compared.
(Based on selected areas)

The farm cost of producing butterfat (for creamery butter making purposes) in New Zealand is much lower than costs in the intensive specialized butter producing sections of Wisconsin.

TABLE 6.- COMPARISON OF NEW ZEALAND AND WISCONSIN REPRESENTATIVE FARM PRODUCTION COSTS OF BUTTERFAT FOR BUTTER MANUFACTURE IN 1923-24.

	Wisconsin a/	New Zealand b/
Average size of farm, acres	132	162
Cows per farm	18.7	32.2
Butterfat per farm, pounds	3,641	5,335
Butterfat per acre, pounds	27.6	32.9
Butterfat per cow, pounds	194.7	165.7
Conservative estimate of cost of production of butterfat per pound, cents	48-60	32-36
Land value interest or rent as proportion of total cost, per cent	22.2	37.5
Representative dairy land values, dollars	150	225

a/ From data obtained by Prof. P. E. McNall, University of Wisconsin, covering the three districts, Barron, Trempeleau and Waupaca.
b/ Based on Dominion statistics and testimony of dairy farmers in New Zealand.

Upon the conservative estimate of 48 cents butterfat per pound of butter in Wisconsin, New Zealand costs of 32 cents a pound are only two-thirds as great. Yet this New Zealand cost is based on land values which are now one-half greater than in Wisconsin.

Roughly speaking (within the accuracy limits of the comparisons possible from existing data) 37.5 per cent of New Zealand's butterfat production costs are due to land values of $225 per acre (£90 per cow requiring two acres) while 22.2 per cent of Wisconsin's costs are due to land values of only $150 per acre. Thus with a low land value, Wisconsin costs are 50 per cent greater than New Zealand costs based upon land values which are 50 per cent above the land values representative of Wisconsin conditions. With higher land values for Wisconsin, the costs become all the more extreme in contrast with the costs in New Zealand. To have costs in New Zealand as great as those in Wisconsin would permit of land values in that country rising to above $500 an acre. States from the Wisconsin point of view, if the Wisconsin farmer wiped out the value of his land, he still would be unable to produce butterfat at the low figure considered adequate in New Zealand. It is evident that from a competitive point of view, New Zealand is in the dairy industry to stay.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

Butter Factory Costs.

The average total cost of assembling butterfat and of making and marketing 17,411,520 pounds of New Zealand butter in the year 1923-24 was 5.52 cents per pound of butterfat or 4.52 cents per pound of butter. This represents a cost that ia 12 per cent above what it was in 1914-15 when total expenses amounted to 4.92 cents per pound of butterfat or 4 cents per pound of butter. Another significant fact is that while it cost 4.5 cents on an average to make and market a pound of butter in 1923-24, the highest cost of operating the smaller and less efficient factories was 8.5 cents on the butterfat basis or 7 cents on the butter basis. The trend of these costs is indicated for ten years in Table 7, indicating also the size of the factories involved.

TABLE 7. BUTTER FACTORY COSTS OF OPERATION IN NORTH AUCKLAND, 1914-15 TO 1923-24.

Year Ending June 30	No. of factories	Total output	Average output per factory	Largest factory output	Smallest factory output	Total costs per pound from farm to ship[1/] Butterfat basis: Ave.	Butterfat basis: Highest	Butter bas: Ave.	Butter bas: Highes
		Pounds	Pounds	Pounds	Pounds	Cents	Cents	Cents	Cents
1914-15	21	6,146,560	292,693	1,350,720	40,320	4.92	8.82	4.00	7.24
1915-16	21	8,325,840	396,469	1,588,160	53,760	4.33	6.98	3.55	5.73
1916-17	21	9,337,440	444,640	1,715,840	71,680	5.10	8.78	4.18	7.19
1917-18	21	8,167,040	388,907	----	----	6.57	----	5.39	----
1918-19	20	7,311,360	365,568	1,624,000	47,040	7.20	12.70	5.90	10.41
1919-20	20	7,510,720	375,536	1,798,720	49,280	5.77	10.16	4.73	8.33
1920-21	20	11,336,640	566,832	2,405,760	96,560	5.89	12.43	4.83	10.20
1921-22	20	15,068,480	753,424	3,080,000	145,600	6.17	10.11	5.05	8.29
1922-23	19	16,020,480	843,183	3,377,920	145,600	6.24	9.43	5.12	7.73
1923-24	20	17,411,520	870,576	3,505,600	107,520	5.52	8.51	4.52	6.99

1/ Conversions to U. S. Currency at yearly average rates of exchange. The peak of costs was in 1920-21 when calculated in British money or in U. S. money at par of exchange for each year.

It will be seen from these figures that the average cost of operating butter factories has been reduced 1.68 cents a pound of butterfat or 1.38 cents a pound of butter since the peak of cost in 1918-19. This is a reduction of over one-fifth of the peak - cost.

The costs of hauling butterfat from farms to factories in 1923-24 was 1.18 cents per pound fat or .97 cents a pound butter. This figure indicates a reduced cost of more than 34 per cent as compared with hauling costs of 1.58 cents a pound butterfat or 1.29 cents per pound butter in 1919-20.

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

The mere cost of butter manufacture for 1924 is generally considered to average 3.30 cents a pound butter, having increased in ten years by 63 per cent from the 1914 figure of 2.02 cents.

Cheese Factory Costs.

The costs of operating cheese factories and of disposing of their output in 1923-24 was 6.54 cents per pound butterfat on the basis of costs for 42 factories making an equivalent of 37,129,600 pounds of cheese. The costs ranged from 6.49 cents per pound butterfat up to 10.33 cents per pound. Inasmuch as these figures include all costs to the English market they require minute analysis before comparison is possible with butter costs or with Wisconsin butter and cheese making and marketing costs.

Distributing System for New Zealand Butter and Cheese

Once butter or cheese is made at the factory and ready for sale, there are two alternative methods of disposal. One is to consign the product to the British market through the services of the butter and cheese commission merchant known as a Tooley Street House. Under this first plan, the factory pays all charges from the factory to the ship-loading port, all ocean freight, port landing charges and a commission of 2-1/2 per cent of the sales value to the Tooley Street (London) merchant. A very large part of the factories, especially those of the North Island, follow this plan.

The second method of disposal is to sell outright on the basis of passing title and responsibility over the product once it is loaded on the ship at New Zealand points. The factory under this plan pays its costs of placing the butter into the steamer, and all ocean freight and other costs beyond the point of departure overseas are met by the buyer. These costs, however, are not far from those met by the factory consigning its output and are discounted in any prices offered in purchase outright. As an example of the cost of disposing of the output of a butter factory on the consignment basis, take the facts regarding a factory selling 865,816 pounds in this manner during the year 1923-24. Its account sales indicated income and costs from Auckland to London as follows, (Table 8).

TABLE 8. COSTS TO A PARTICULAR NEW ZEALAND FACTORY OF DISPOSING BY CONSIGNMENT OF 865,816 POUNDS OF BUTTER DURING 1923-24.

Conversions made at the average rate for the year ending June 30, 1924: $4.4034

	Total value and costs	Cents per pound	Per cent of total selling value
	Dollars		
Sales value of butter in London	341,386.34	35.68	100.00
Factory received net from London	303,116.92	31.68	88.79
Tooley House Commission	8,534.69	.90	2.50
Exchange	5,291.48	.55	1.55
Ocean freight	17,103.45	1.79	5.01
Marine insurance	2,389.70	.24	.70
Landing and port of London charges	2,116.59	.22	.62
London discounts allowed	2,833.51	.30	.83

From these figures it appears that this fairly representative butter factory paid out 11.21 per cent of the London value of the butter for expenses from Auckland to the buyer in London. Hence the factory received a price for its butter at the factory of 31.68 cents a pound. This price was 88.79 per cent of the London price. Besides this, it paid freight from the inland point where the factory was located to Auckland and the charges for grading and of the freezing works for loading into the steamer. These items, not shown in the table, totaled a further one cent per pound or 2.54 per cent of the London butter value, leaving a net price to the factory of 30.68 cents a pound or 86.26 per cent of the London price. Local freight costs are shown in Table 9.

TABLE 9. LOCAL FREIGHT COSTS ON BUTTER AND CHEESE.

Length of haul	Freight costs	Additional cost for tare	Total net cost
Miles	Cents per lb.	Cents per lb.	Cents per lb.
20	.126	.018	.144
50	.158	.023	.181
100	.180	.025	.205

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

Ocean Freight Charges

The cost of ocean freight commences at the following points in New Zealand in applying Dairy Produce Control Board freight rate terms: Auckland, New Plymouth, Wanganui, Napier and Wellington in the North Island and Lyttleton, Dunedin and Bluff in the South Island. The freight charges and their importance are as follows:

TABLE 10. OCEAN FREIGHT COSTS ON BUTTER AND CHEESE.

Product	From New Zealand points to Great Britain and Eastern coast of North America		From New Zealand points to Vancouver, San Francisco, Honolulu, Shanghai	
	Cents per pound	Per cent of 1923-24 value	Cents per pound	Per cent of 1923-24 value
Butter	1.567	4.51	1.762	5.08
Cheese	1.66	5.04	1.942	5.90

Freight rates from best butter and cheese producing sections within the United States to the eastern coast markets during the same period were slightly higher on butter and lower on cheese than were the ocean rates from New Zealand. Carload rates for freight only on butter from Long Prairie, Minnesota to New York were $1.925 per 100 pounds, and on cheese from Plymouth, Wisconsin $1.035 per 100 pounds.

Summary of the Costs of Marketing

An approximate idea of the complete costs of operating butter and cheese factories in New Zealand and of landing the produce in Great Britain and selling it is given by the detailed summary in the following table:

TABLE 11. COSTS OF MARKETING NEW ZEALAND MILK AS BUTTER AND CHEESE IN 1923-24.
(Conversion to U.S. currency at average rate of exchange for the year ending June 30, 1924: or $4.4034)

Item	Butter		Cheese	
	Cents	Per cent	Cents	Per cent
London sales price..................	34.726	100.000	32.900	100.000
Ocean freight (including tare)........	1.763	5.076	1.942	5.902
Government grading charge...........	.034	.099	.014	.043
Dairy Produce Control Board levy......	.114	.328	.057	.173
Refrigeration Company charges for storage and loading on ship........	.310	.894	.154	.467
Insurance, factory to overseas buyer.	.140	.404	.121	.369
Freight, factory to port of export...	.208	.600	.208	.632
Factory cost of operation less above item only....................	4.024	11.588	7.045	21.414
Available to pay patrons for milk (per butterfat pound)...............	28.132	81.011	23.359	71.000

Briefly, according to this summary of New Zealand butter and cheese industry marketing costs, the farmers receive 81 per cent of London butter prices and 71 per cent of London cheese prices. Of the margin of costs for butter amounting to 18.98 per cent, factory operation takes 11.58 per cent, ocean freight 5.07 per cent, local rail freight .6 per cent and all other costs such as insurance, refrigeration charge, grading fees and Control Board levy take a total of 1.72 per cent. Refrigeration company charges are the heaviest of these four minor charges.

Of the margin of costs for cheese amounting to 29 per cent, factory operation takes 21.41 per cent, ocean freight 5.9 per cent and the other four items of cost a total of 1.68 per cent of which local rail freight is the heaviest single item amounting to .63 per cent.

Quality of New Zealand Butter and Cheese.

Commencing with the year 1912-13, classified statistics provide the possibility of measuring the effect and value of New Zealand's Government grading system for export butter and cheese. These facts for six years have been analyzed indicating the grading results for the first three years, 1912-13 to 1914-15, and for the second period of three years, 1921-22 to 1923-24. The comparisons in Table 12 show that a constant shift is being made upward by changing the lower scoring butter of the first grade into higher scoring butter in the first grade. In other words, butter scoring from 88 to less than 92 is becoming less in proportion while butter scoring "superfine", or from 92 upward, is becoming a larger proportion of the total.

TABLE 12. RESULTS OF DAIRY PRODUCTS GRADING SYSTEM OF NEW ZEALAND GOVERNMENT.

Butter.

Score	Grade	Number of 56 lb. boxes		Per cent grade results		Gain or loss 1921-1924 over 1912-1915
		Years 1921-1924	Years 1912-1915	Years 1921-1924	Years 1912-1914	
92 upward	Gov. #1 superfine	4,057,512	1,153,079	61.19	46.94	+ 14.25
88 under 92	Gov. No. 1: ordinary	2,294,716	1,217,100	34.61	46.94	- 14.94
80 under 88	Gov. No. 2: poor	277,297	85,648	4.18	3.48	+ .70
79 downward	Gov. No. 3: unfit	1,009	798	.01	.03	- .02
Total butter graded		6,630,534	2,456,625	100.00	100.00	---

THE DAIRY INDUSTRY OF NEW ZEALAND, CONT'D.

TABLE 12. CONT'D.

Cheese

	Number of 160 lb. crates		Per cent grade results		Gain or loss 1921-1924 over 1912-1915
	Years 1921-1924	Years 1912-1915	Years 1921-1924	Years 1912-1914	
Upper No. 1	675,334	95,667	25.20	6.30	+ 18.90
Lower No. 1	1,896,068	1,305,329	70.76	85.90	- 15.15
No. 2	103,336	117,819	4.04	7.75	- 3.71
No. 3	326	663	.00	.04	- .04
Total cheese graded	2,680,062	1,519,478	100.00	100.00	----

According to these figures, during 12 years the relative amount of third grade butter has been reduced to less than one-half. Second grade butter has slightly increased, but the real improvement through the grading system is that one-seventh of the butter has been raised from lower or merely ordinary first grade to the "superfine" class of first grade. As a consequence, where one-third of the butter was "superfine" nine years ago (1912-1915), today (1922-1925) three-fifths is superfine. This is a real achievement and means a great deal in the disposal of New Zealand's trebled butter output during this period.

With respect to cheese, the output of third grade, while of practically no consequence in the earlier period, has been virtually eliminated. Second grade production has been almost cut in half and more than one-seventh of the cheese formerly in the lower class of first grade has been raised in quality to that of upper first class or superfine. Thus one-fourth of the cheese is now superfine, where nine years ago scarcely one-sixteenth was of this quality. The influence of increasing proportions of superfine cheese to sell makes the work of marketing easier and the prices received more satisfactory.

Increased world competition in butter and cheese is being met further by New Zealand dairy producers through their cooperative factories representing 89.5 per cent of all the factories which, with the aid of the National Dairy Association and the New Zealand Dairy Produce Control Board, are preparing to raise the lower limit for first grade by two points, making 90 score the dividing line between first and second grade instead of 88 score. In fact, this move is the most important item next to the marketing work of the Dairy Control Board in the platform of progress now being pushed by the leaders of the dairymen of New Zealand. It is a move made possible by the general appreciation of the Government Grading System, and by the general appreciation that quality butter and cheese is the only basis by which better merchandising may be made to win even more satisfactory prices against the competition of Denmark and Canada.

Quality of Products by Grade.

The high proportion of superfine butter as well as of cheese is shown in Table 13.

TABLE 13. BUTTER AND CHEESE GRADING RESULTS, NEW ZEALAND,

During the Year Ending March 31, 1924.

Grade classification by score	Butter		Cheese	
	No. of 56 lb. boxes graded	Per cent	No. of 180 lb. crates graded	Per cent
92 Score and upward- Superfine or Upper No. 1	1,424,175	62.58	270,865	27.13
88 and under 92- Ordinary or Lower No. 1	755,081	33.19	689,978	69.13
80 and under 88	95,581	4.20	37,280	3.73
79 and below	747	.03	154	----
Total	2,275,584	100.00	998,277	99.99
Average score	91.9237 points		90.7053 points	

In order to guarantee high quality products, New Zealand dairy producers are going still farther. They are grading a rapidly increasing proportion of the raw materials from which these products are made and they are paying for quality. Farmers are paid good prices for high quality and discouraging prices for low grade milk and cream. In fact, the poorest in quality is often rejected by a factory, with the assurance due to effective agreements that no other factory will accept this rejected article. By this means New Zealand dairymen expect further to strengthen their position in the dairy markets of the world.

1.9 Ec73

RECEIVED
U S D[illegible] Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
D-2

August 21, 1925

FOREIGN NEWS ON DAIRYING

TRADE PROSPECTS IN NETHERLANDS FAVOR CHEESE RATHER THAN BUTTER

The recent increase in exports of both butter and cheese from the Netherlands is causing considerable speculation as to which will be the most profitable line of production in the future. Notwithstanding growing competition, a somewhat more optimistic view is entertained in the Netherlands dairy industry about cheese export prospects than for that of butter. Considerable concern is expressed over the future of foreign trade in butter, according to a statement of the situation appearing in a recent issue of "Holland's Import and Export Trader".

The renewed export trade with Germany is held largely responsible for the prosperous butter trade of 1924. This is apparent from the fact that while in the twelve months of 1923 only slightly more than 2,000,000 lbs. of butter were exported to Germany, that country during 1924 took 51,000,000 pounds of Dutch butter. Twice as much was taken each month as in the entire preceding year. Of the butter exports from the Netherlands in 1924 amounting in all to 76,570,000 lbs. Germany took exactly two-thirds. Moreover, the exports to Germany alone in 1924 were nearly as great as The Netherlands total exports of 52,769,000 pounds in 1923.

Butter prices in the Netherlands reflected this strengthened demand from Germany, rising considerably above those of the previous period of stagnation in the German trade. Obviously any such further stimulus cannot be looked for in the same direction another year.

This marked increase of almost 50 per cent in the butter export of the Netherlands within a period of one year was due not entirely to increased butter production, but partly to increased consumption of oleomargarine by the Dutch people and in some measure, as well, to the increase in imports of lower grade butter from 1,687,000 lbs. in 1923 to 3,528,000 lbs. in 1924.

An unmistakable tendency toward heavier production of butter in competing countries is regarded as one reason for discounting the prospects for an equally favorable outlet for butter in the near future. Especially is this to be considered in connection with the probable tendency on the part of Germans under prevailing conditions of comparative stability of prices to return to a basis of greater frugality and saving. The tendency in the present German policy to place restrictions upon imports of various products is to be recognized also as of special concern to the Dutch butter trade. It is with such considerations in mind that attention is being drawn to the comparative advantage under present prospects of the Dutch cheese industry as affected by foreign trade.

Considerably more cheese was exported from the Netherlands in 1924 than in the preceding year, or in any year preceding the war, But for the expansion of their export trade during the early years of the war, the export of 170,352,000 pounds of cheese in 1924 would have constituted a record figure. It did not represent as great an increase over 1923, however, as in the case of butter exports. Exports of cheese amounted in 1923 to 136,646,000 pounds and in 1913 to 145,336,000 pounds, which was at that time the largest export on record.

As in the case of butter, Germany's record imports of cheese were a large factor in the prosperity of the dairy industry in 1924. Of the total cheese exports from the Netherlands of 170 million pounds, only 41 per cent went to Germany, however, as compared with 66 per cent in the case of butter. Germany took 15 per cent of the 1923 cheese exports and 20 per cent in 1913. While Germany is regarded as the most important single source of foreign demand for Dutch cheese, the cheese outlook is considered more favorable than that for butter to a considerable extent because cheese exports continue to be more widely distributed than the exports of butter.

While the increase in the 1924 exports of cheese is in itself regarded as favorable, its importance to the Dutch cheese industry is still greater when considered in connection with the prices obtained, which compared favorably with those of the preceding year. The cheese trade for 1924 was much more favorable than that of 1923 because of the fact that high prices ruled just when production was heaviest, from May to October. On the whole, without ignoring the potential competition from countries where the possibility of the profitable manufacture of a good quality of cheese is already attracting attention, a somewhat more optimistic view is entertained about the prospect for cheese export than for that of butter.

Exports of cheese and butter from The Netherlands by countries of destination for calendar years 1900 to 1924 are given on the following pages:

THE NETHERLANDS: Exports of Cheese (gross weight) 1900-1924

Year	Germany	Belgium	Great Britain	France	Dutch E. Indies	Spain	Cuba	United States	Other Countries	Total
	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs	1,000 lbs.
1900...	14,123	24,925	36,003	7,436	697	2,196	154	4,661	11,014	101,208
1901...	14,246	24,427	39,592	7,520	666	2,405	95	4,420	10,897	104,269
1902...	15,077	27,802	36,133	7,884	683	2,432	176	4,350	10,247	104,785
1903...	15,520	29,105	29,105	8,102	681	2,253	324	4,253	10,646	109,024
1904...	17,848	29,101	29,705	7,756	710	2,491	159	5,042	10,236	103,072
1905...	15,465	29,855	26,821	6,504	882	2,469	126	---	16,316	98,438
1906...	17,381	31,636	28,305	7,282	842	2,553	192	---	16,530	104,741
1907...	21,682	31,709	29,321	8,340	853	2,646	203	---	18,893	113,647
1908...	22,833	35,161	32,114	8,530	827	2,696	168	---	15,924	118,253
1909...	23,422	36,383	35,349	7,687	983	2,429	82	---	17,736	124,070
1910...	3,342	38,175	30,058	8,571	1,149	---	51	---	41,427	122,772
1911...	22,560	36,554	25,494	8,172	948	---	29	---	19,850	113,607
1912...	24,495	41,451	33,713	7,383	1,124	---	606	---	22,335	131,108
1913...	29,248	36,859	42,148	9,103	1,358	---	2,487	---	24,134	145,336
1914...	43,719	25,313	48,788	9,149	1,631	---	1,640	---	19,332	149,573
1915...	139,408	11,876	18,536	8,554	1,437	2,599	1,089	---	6,834	190,334
1916...	168,180	5,331	15,099	4,004	1,016	---	584	---	4,894	199,108
1917...	64,330	9,469	27,388	3,814	1,631	179	22	---	18,270	123,634
1918...	15,721	229	11,224	549	51	---	---	---	5,119	32,893
1919...	7,161	2,075	10,523	886	1,027	505	489	---	6,911	27,372
1920..	29,429	20,035	12,379	12,734	1,786	5,309	3,715	2,090	11,872	99,738
1921...	29,934	29,123	15,287	21,259	1,695	5,847	2,191	1,479	7,877	115,279
1922...	20,741	43,118	20,393	31,325	1,841	7,191	3,108	2,646	13,406	143,769
1923...	20,745	34,555	24,237	28,472	1,468	6,640	3,825	3,836	12,866	136,646
1924...	69,504	31,483	17,463	17,463	1,662	6,561	4,167	4,140	12,628	170,352

THE NETHERLANDS: Exports of Butter (gross weight) 1900-1924

Year	Germany	Belgium	Great Britain	France	Duthh East Indies	United States	Other Countries	Total
	1,000 lbs.	1,000 lbs.	1,000 lbs	1,000 lbs	1,000 lbs.	1,000 lbs.	1,000 lbs.	1,000 lbs.
1900...	11,160	5,485	23,744	1910-16	2,130	---	2,240	49,762
1901....	10,699	5,694	29,277	not separ-	1,841	---	1,153	48,708
1902....	10,430	4,747	32,571	ately men-	1,929	---	716	50,399
1903....	14,092	6,488	23,475	tioned	1,810	---	783	51,649
1904....	21,173	6,872	21,158	mostly in-	2,006	---	836	52,044
1905....	22,712	7,260	18,772	cluded in	1,772	---	646	51,162
1906...	23,600	10,243	19,561	the amount	2,235	---	767	56,400
1907....	31,122	12,522	18,311	exported	2,059	---	794	64,809
1908....	29,967	12,145	27,897	to Belgium	2,200	---	701	72,911
1909....	35,274	13,188	17,156		2,262	---	807	68,687
1910....	37,187	13,838	18,276		2,469	---	686	72,456
1911....	31,100	20,540	11,861		2,264	----	658	66,513
1912....	39,901	18,439	13,373		2,866	---	705	78,285
1913....	41,954	18,574	17,502		2,641	---	1,052	81,722
1914....	43,358	16,171	21,034		2,864	---	999	84,408
1915....	80,854	3,245	5,428		2,906	---	919	93,352
1916....	69,253	1,409	4,837		3,016	---	483	78,997
1917....	39,088	3,929	9,195	1,235	591	---	179	54,216
1918....	3,688	191	1,224	243	51	---	18	5,414
1919....	14,334	9,052	198	4,169	820	---	1,667	3,024
1920....	8,858	9,627	13,433	6,660	1,451	3,472	2,074	45,576
1921....	2,564	14,952	7,167	16,283	1,556	88	1,918	44,529
1922....	35	22,006	8,761	16,905	730	---	2,224	50.981
1923....	2,169	15.721	20,893	7,692	1,182	573	4,539	52,829
1924...	50,704	8,446	10,368	1,576	963	172	3,501	76,570

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

October 29, 1925.

F.S.
D-3

FOREIGN NEWS ON DAIRYING

CONTROL OF SHIPMENTS OF NEW ZEALAND DAIRY PRODUCE

Beginning with the current seasonal year in New Zealand, a far-reaching plan for the control of shipments to overseas markets of the entire surplus of butter and cheese, has been put into effect by the New Zealand Dairy Produce Control Board. From the point of view of the competitors of New Zealand dairy interests in world markets, one of the most important functions of the recently established Control Board will be that of stabilizing the shipment of produce. The aim of the New Zealand producers is to establish a steady and sustained demand by spreading the supplies more evenly throughout the year.

Tentative arrangements for the shipment each month of certain percentages of the coming season's production are now made public by the Board, with the explanation that the Board "considers its dissemination to be in the interests of the dairy industry." The following is taken from the first annual report of the Board as it appeared officially in the New Zealand Dairy Produce Exporter of August 29, 1925:

PRODUCTION AND REGULATION OF SHIPMENTS.

Commodity and Month	Average Seasonal Production	Per cent of Season's Production to be Shipped.	Per cent of Season's Prod. withheld or added to shipments a/	% of Season's Prod. Accumulated end of month a/b/
BUTTER	Per cent			
August...	3.02	(All butter to be		
September	8.17	(shipped as prompt-		
October..	12.79	(ly and regularly		
November.	14.18	(as possible.		
December.	14.30	9	Withhold 5	5
January..	13.56	9	" 5	10
February.	11.12	9	" 2	12
March....	10.43	9	" 1	13
April....	6.57	8½	Added 1	12
May	3.86	6	" 2	10
June.....	1.10	5½	" 3	7
July.....	.76	5½	" 4½	2½
CHEESE				
August...	.40	(All cheese to be		
September	4.01	(shipped as prompt-		
October..	10.16	(ly and regularly		
November.	15.08	(as possible.		
December	15.67	10	Withhold 5	5
January..	14.86	10	" 5	10
February.	11.41	10	" 1½ to 2	11½ to 12
March....	10.09	10	" 1½ " 2	13 " 14
April....	8.43	10		
May......	7.41	7		
June.....	2.17	7	Added 5	8 " 9
July.....	.18	7	" 6 to 6½	1½ " 3

a/ Approximate figures. b/ Accumulations added by Bureau of Agri. Economics.

"It will be seen that during the six months, October to March, enclosure, 76.40 per cent of our season's butter is manufactured and 77.27 per cent of our cheese. Ample evidence is available that if supplies were spread more evenly throughout the year a steady and sustained demand could be established. To assist in this, the board has tentatively decided during the forthcoming season to arrange for shipments on the basis outlined above. This course can be taken safely without risking the quality of the produce".

----------0----------